

Fig. 1A

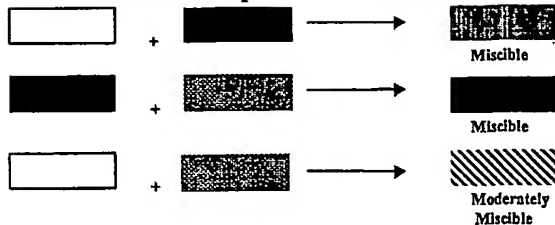


S_p = Polymer solvent (or mixture of solvents)

S_c = Compatibilizing Solvent

S_w = Water rich phase (aqueous phase)

Solvent Relationships

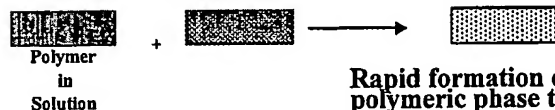


Key is to have solvents with close polarities so that the solidification of the polymer phase can be controlled by varying the composition of $S_p + S_c$ thus altering water diffusion (e.g., S_p = THF (polarity = 0.838), S_c = Acetone (polarity = 0.881) and water (polarity = 0.962). NMP (polarity is 0.970)

FIG. 1B



Step 1



Step 2

Rapid formation of thermodynamically stable nano-scale polymeric phase that solidifies due to diffusion of the water phase. The direction of the arrow in Figure 1A represents the direction of water phase migration due to a partition gradient.

FIG. 2

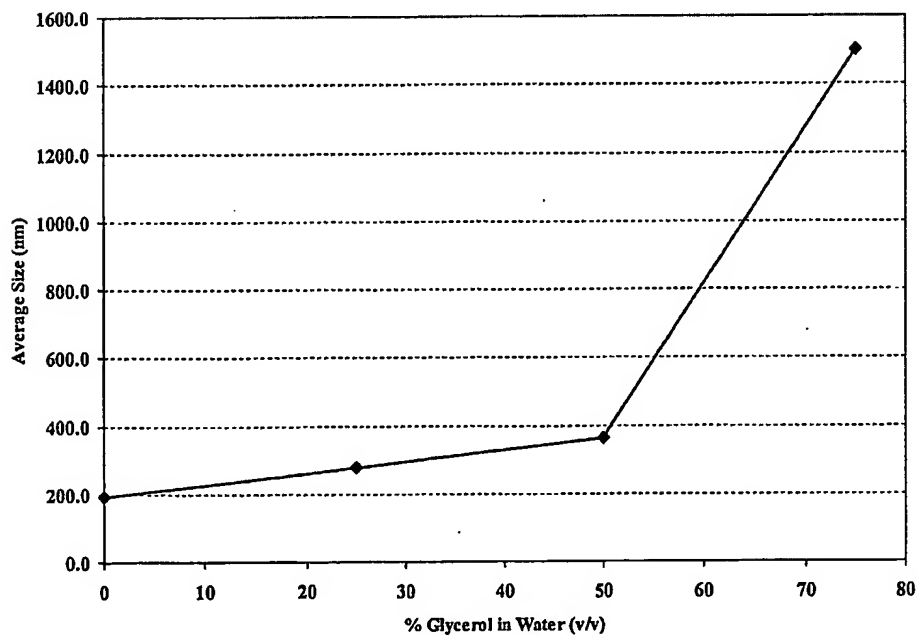


FIG. 3

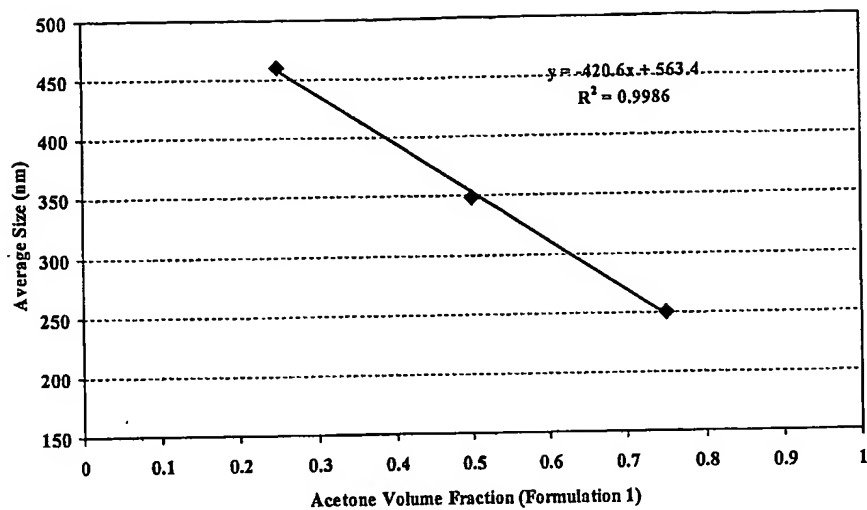


FIG. 4

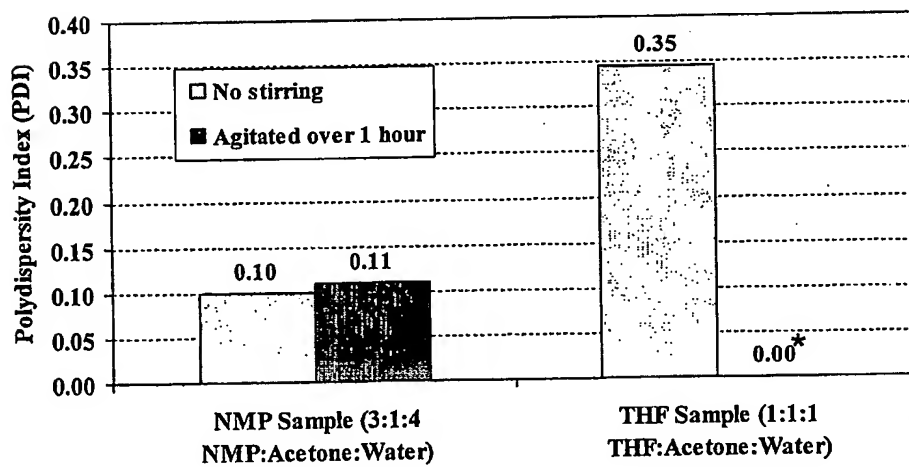


FIG. 5

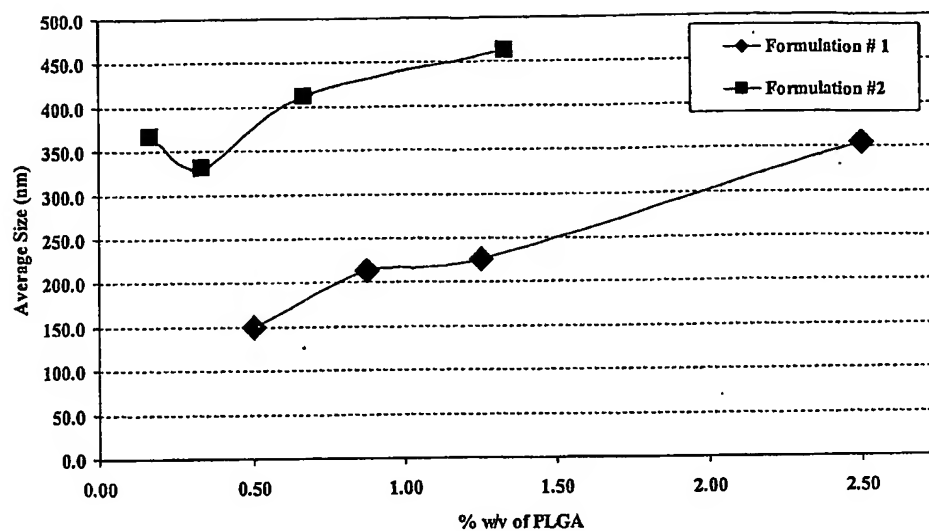


FIG. 6

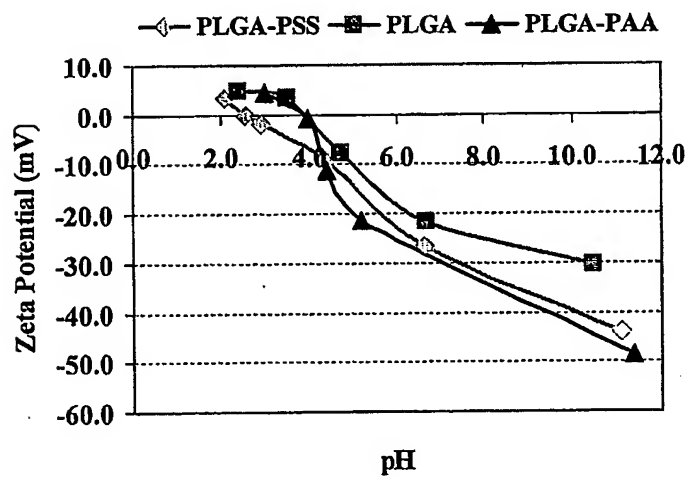


FIG. 7

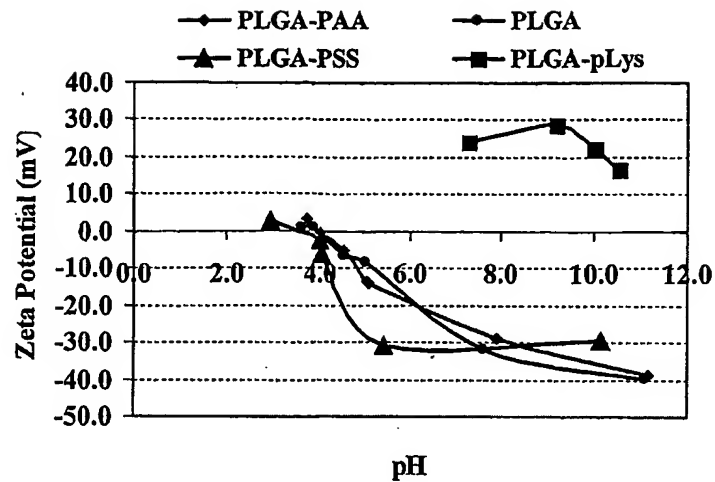


FIG. 8

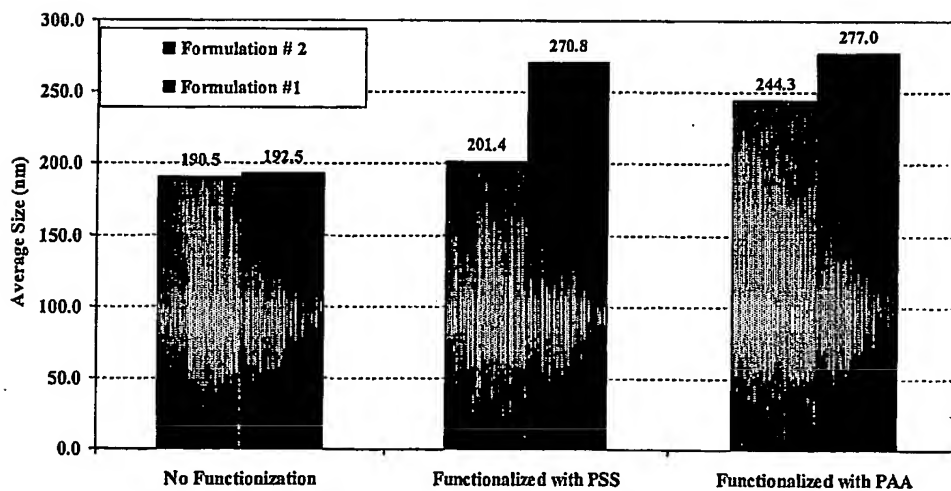


FIG. 9A

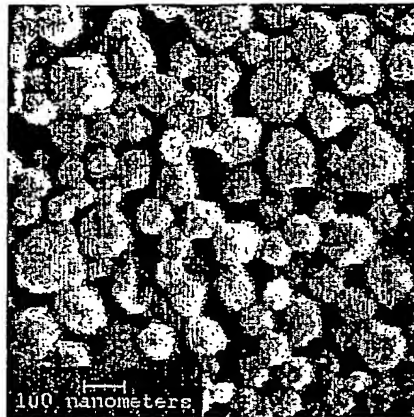


FIG. 9B

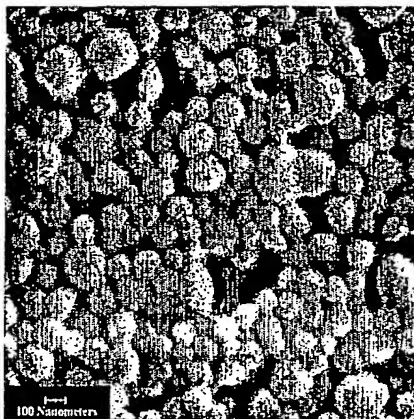
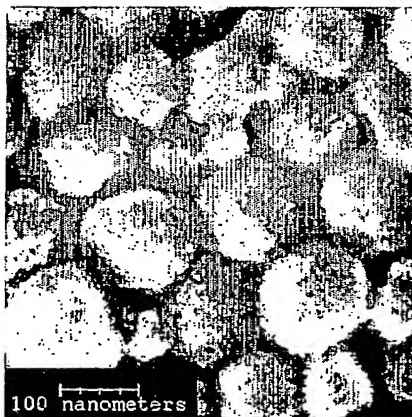


FIG. 9C



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